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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Dean Y Li

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EXAMINER

ROMEO, DAVID S

ART UNIT

PAPER NUMBER

1647

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/519,342	Applicant(s) LI ET AL.	
	Examiner David S. Romeo	Art Unit 1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-9 and 19-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-9 and 19-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed 10/29/2008 has been entered. Claims 7–9 and 19–22 are pending and being examined.

Claim Rejections - 35 USC § 102

5 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

10 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

 Claims 19–22 are rejected under 35 U.S.C. 102(b) as being anticipated by Geng (FASEB Journal, (March 7, 2001) Vol. 15, No. 4, pp. A8) in view of Huminiecki (Genomics. 2002 Apr;79(4):547-52).

15 A 35 U.S.C. 102 rejection over multiple references has been held to be proper when the extra references are cited to:

- (A) Prove the primary reference contains an “enabled disclosure;”
- (B) Explain the meaning of a term used in the primary reference; or
- (C) Show that a characteristic not disclosed in the reference is inherent.

20 MPEP § 2131.01.

 Geng discloses that in a Matrigel assay, recombinant human Slit2 facilitated the in vitro neovasculture formation of HUVECs (Abstract 6.22). Human endothelial cells express Robo4 (Huminiecki, page 549, paragraph bridging left and right columns, page 550, left column, full paragraph 1 and page 551, Table 2). HUVECs are human endothelial cells. Therefore, Geng
25 discloses a method comprising activating Robo-4 receptor in endothelium tissue expressing Robo-4 receptor, wherein activating said Robo-4 receptor comprises providing a ligand of said

Robo-4 receptor and allowing the ligand to bind to said Robo-4 receptor, wherein the ligand comprises Slit ligand, wherein the ligand comprises human Slit2 ligand.

“[P]reventing angiogenesis” is an intended use of the claimed method and does not patentably distinguish the claimed method from Geng’s method.

5 Applicants argue that:

10 Amended independent claim 19 recites a method of preventing angiogenesis in endothelium tissue expressing Robo-4 receptor. The Geng reference teaches only that recombinant human Slit 2 facilitates the formation of vasculature. The Geng reference makes no mention of a method of preventing angiogenesis. Huminiecki provides teachings regarding the Robo-4 receptor, but does not teach a method of preventing angiogenesis and, in fact, specifically teaches that ligands of Robo-4 remain to be identified. As such, Applicants respectfully submit that the teachings of Geng in view of Huminiecki do not expressly or inherently teach each and every element recited in any of claims 19 through 22, and Applicants respectfully
15 request that the rejection under 35 U.S.C. § 102(b) be withdrawn.

Applicants’ arguments have been fully considered but they are not persuasive. The recitation of “preventing angiogenesis” occurs in the preamble and merely recites the purpose of the claimed use. Therefore, the recitation "preventing angiogenesis" has not been given
20 patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See
25 *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

The extra Huminiecki reference is cited to show that human endothelial cells express Robo4. Therefore, it is immaterial whether Huminiecki teaches a method of preventing angiogenesis or that ligands of Robo-4 remain to be identified.

With respect to the newly added clause "wherein activating ... inhibits migration ...", it is noted that Huminiecki discloses that "... as roundabout is involved in repulsive axon guidance, magic roundabout may be involved in inhibition of endothelial cell migration. The latter is known to precede differentiation of endothelial cells into tube-like vessel precursors. Slit-2 was recently shown to inhibit leukocyte chemotaxis ..., which is of interest in that leukocytes and endothelial cells are derived from a similar cell lineage" (see page 549, paragraph bridging left and right columns). Therefore, inhibition of endothelial cell migration is not incompatible with Geng's facilitation of neovasculature formation of HUVECs with Slit2, and it would appear to be a necessary prerequisite for neovasculature formation. Therefore, the examiner concludes that inhibiting the migration of endothelial cells is inherent to Geng's method.

The examiner accordingly finds that Geng teaches each and every element of independent claim 19, and those claims dependent therefrom, either expressly or inherently.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

15 The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

20 Claims 7–9 and 19–22 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of inhibiting the migration of HMVECs, does not reasonably provide enablement for prevented guided navigation of endothelial tubes during angiogenesis to a target cell mass comprising activating a Robo-4 receptor on said endothelial tubes, wherein said activating inhibits said guided navigation. The specification does not enable

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any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

Applicants argue that:

5 In order to more fully address the rejection ..., Applicants have submitted herein a Declaration under 37 C.F.R. § 1.132 by Dean Y. Li... Further, ...the references cited by the Examiner in support of the rejection ...are based on experimental work that is distinguishable from the work reflected in the specification of the present application and/or simply do not provide enough information to contravene the specific results achieved by the inventors in the present application. Moreover, the specification of the present application provides specific experimental examples that, when considered together with the detailed description of the Robo-4 receptor, exemplary ligands, and methods of use described in the present application, would allow one of ordinary skill in the art to practice the full scope of the invention recited in claims 7 through 9 and 19 through 22, as they are amended herein.

Applicants' arguments have been fully considered but they are not persuasive. The declaration under 37 CFR 1.132 filed 10/29/2008 is insufficient to overcome the rejection of claims 7-9 and 19-22 based upon a specification that does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims, as set forth in the last Office action because:

Declarant argues that:

25 Suchting ...does not contravene the subject matter recited in the rejected claims. ...the experiments described in Suchting utilized an isolated, soluble receptor ectodomain in a BIAcore binding assay, an artificial and in vitro system. Suchting does not utilize a full-length, membrane bound Robo-4 receptor in the context of whole cells, endothelial tubes or in-tact tissue, and in that manner, Suchting is distinguishable from the subject matter recited in the rejected claims. Suchting's experiments do not reflect the behavior of Robo-4 or its response to Slit proteins in whole cells, endothelial tubes or in-tact tissues expressing Robo-4.

Declarant's arguments have been fully considered but they are not persuasive. The MPEP makes clear, "factual evidence is preferable to opinion testimony" The MPEP also

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makes clear, “opinion” testimony is entitled to be considered, i.e., it is “admissible” in an ex parte proceeding. MPEP §716.01(c). The mere fact that opinion testimony is admissible (i.e., is entitled to be considered) does not per se mean it must be accorded controlling weight. In assessing the weight to be given expert testimony in an ex parte context, the examiner may properly consider, among other things:

- (1) The nature of the fact sought to be established;
- (2) The strength of any opposing evidence;
- (3) The interest of the expert in the outcome of the case;
- (4) The presence or absence of factual support for the expert's opinion.

Unless an “expert” states the underlying basis for an opinion, it may be difficult to accord the opinion significant weight. Opinions expressed without disclosing the underlying facts or data may be given little, or no, weight.

Declarant seeks to establish to establish that Suchting is distinguishable from the subject matter recited in the rejected claims and that Suchting's experiments do not reflect the behavior of Robo-4 or its response to Slit proteins in whole cells, endothelial tubes or intact tissues expressing Robo-4.

Suchting used "the soluble extracellular domain of Robo4 as a probe of function in angiogenesis and endothelial biology" (Abstract). The soluble extracellular domain was used in the context of a mouse subcutaneous sponge angiogenesis assay, a rat aortic ring assay, a cell growth assay and endothelial cell migration assay (pages 4-5). In these assays “the soluble extracellular domain of the receptor (Robo4Fc) showed diverse in vivo and in vitro activities including 1) inhibition of angiogenesis in vivo in the rodent subcutaneous sponge model, 2) inhibition of tube formation in the rat aortic ring assay, 3) inhibition of VEGF- and bFGF-stimulated endothelial cell migration, and 4) inhibition of endothelial proliferation” (Abstract).

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The soluble extracellular domain of Robo4 had potent inhibitory effects on endothelial cell function and on angiogenesis in vivo (page 7, first paragraph of Discussion). Thus, Suchting used the soluble extracellular domain of Robo4 in the context of whole cells in vivo and in vitro.

Although the technical details of Suchting's experiments are clearly distinguishable from the presently claimed method, the examiner declines to ignore Suchting's results on this basis because declarant's arguments, that Suchting's experiments do not reflect the behavior of Robo-4 or its response to Slit proteins, are unsupported by objective evidence. If declarant presented evidence utilizing an isolated, soluble receptor ectodomain in a BIAcore binding assay, the examiner would be hard-pressed to make or maintain an enablement rejection over "an artificial and in vitro system" not reflecting real world results because the examiner's position would be unsupported by objective evidence.

Furthermore, Bedell, Kaur, Eichmann and Fujiwara all give weight to Suchting's results. Specifically, "...data from various groups provide conflicting evidence for slit2 binding to robo4..." (Bedell (Proc Natl Acad Sci U S A. 2005 May 3;102(18):6373-8), paragraph bridging pages 6377-6378); "...the slit2-Robo4 interaction remains controversial ..." (Kaur (J Biol Chem. 2006 Apr 21;281(16):11347-56), page 11355, right column, first paragraph); "Results on Robo4 binding to Slits are controversial..." (Eichmann (Genes & Dev., May 1, 2005; 19(9):1013-1021), page 1016, right column, first full paragraph). See also Fujiwara (Vasc Med. 2006 May;11(2):115-21), paragraph bridging pages 118-119 and page 120, left column, full paragraph 1.

In view of the lack of support for declarant's arguments and the weight given to Suchting's results by others, the examiner does not find declarant's arguments to be persuasive.

Declarant argues that:

5 Zhu (Neuron. 1999 Jul; 23(3): 473-485) does not contravene the subject matter
recited in the rejected claims. ...the authors of Zhu did not use isolated, partially
purified or purified Slit protein in their experiments. Instead, HEK cells
expressing Slit protein were used. It is known that mesenchymal cells, such as
HEK cells, secrete a number of factors and cytokines, many of which are
proangiogenic. Therefore, the experimental results provided in Zhu are not
10 predictive of effects of exposing endothelial cells, endothelial tubes, or in-tact
tissue expressing Robo-4 to an isolated ligand, such as a Slit protein, capable of
activating the Robo-4 receptor.

 The examiner notes that specification discloses that HEK-CM induced Control-HEK cells
to migrate at a rate of three to four-fold greater than background (FIG. 6a) (page 16, paragraph
15 0043), which indicates that HEK cells may produce or secrete factors that stimulate cell
migration. The relevance of this to angiogenesis is unclear. Nevertheless, the examiner cedes
this point with respect to Zhu and relies on the other references to show results counter to those
claimed. Specifically, the Wang (Cancer Cell. 2003 Jul;4(1):19-29) and Geng (FASEB Journal,
(March 7, 2001) Vol. 15, No. 4, pp. A8) references, which show that Slit2 induces the migration
20 of HUVECs and facilitates the in vitro neovasculature formation of HUVECs. Geng also
discloses that HEK293 cells secreting recombinant hSlit2 caused massive neovascular
angiogenesis in the corneas of rabbits.

Declarant argues that:

25 Kaur (J Biol Chem. 2006 April 21; 281(15): 11347-56), Bedell (Proc Natl Acad
Sci USA. 2005 May 3; 102(18):6373-8) and Eichmann (Genes Dev. 2005 May 1;
19(9): 1013-21) do not contravene the subject matter recited rejected claims.
Eichmann is a review publication that does not take into account the information
provided in the as-filed specification of the above-referenced application. With
30 respect to Kaur and Bedell, both references focus on the role of zebrafish Robo-4

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in the vascular development of zebrafish, and neither reference addresses ligands capable of activating Robo-4.

Declarant's arguments have been fully considered but they are not persuasive. Eichmann
5 does take into account "Park et al. 2003" (page 1016, right column, first full paragraph), which
appears to at least be the published results of the information provided in the as-filed
specification of the above-referenced application. Furthermore, the examiner did not say that
Eichmann contravenes the subject matter recited in the rejected claims. The examiner only said
that Eichmann provides evidence that there is a lack of predictability in the art. Specifically,

10 (6) The role of the Slit family and their Robo receptors in vascular guidance
thus remains to be clarified. See Eichmann (Genes & Dev., May 1, 2005; 19(9):
1013 - 1021), paragraph bridging pages 1015-1016 through page 1016, right
column, full paragraph 1.

15 Kaur was also cited as providing evidence that there is a lack of predictability in the art
and that that vascular guidance is complex. Bedell (Proc Natl Acad Sci U S A. 2005 May
3;102(18):6373-8) demonstrates that roundabout4 signaling is essential for angiogenesis in vivo
(page 6373, paragraph bridging left and right columns). Claims 19-22 propose activating a
Robo4 receptor in order to prevent angiogenesis, which is counter to the results of Bedell.

20

Declarant argues that:

25 Migration of endothelial cells and formation and migration of endothelial tubes
are essential in the process of angiogenesis. As is supported by the experimental
evidence provided in the specification of the above-identified patent application,
activation of Robo-4 expressed in endothelial cells inhibits migration of such
endothelial cells and provides a negative cue to the formation and migration of
endothelial tubes. ...The specification of the above-identified patent application
further reveals the association of Robo-4 expressed in the context of a cell surface
and Slit protein ..., and evidences that the presence of expressed Robo-4 is
30 sufficient to render cells responsive to Slit protein In addition, the
specification of the above-identified application provides specific descriptions of

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Robo-4 receptor, Slit proteins and methods that would allow one of ordinary skill in the art to confirm the results described therein and carry out the subject matter recited in the rejected claims.

5 Declarant's arguments have been fully considered but they are not persuasive. The examiner does not doubt that in the experimental systems tried, the inventors achieved the results indicated in the specification. However, the claims are directed to preventing or inhibiting guided navigation of endothelial tubes or preventing angiogenesis whenever and wherever angiogenesis is occurring by activating a Robo4 receptor with any indeterminate mechanism, any
10 indeterminate ligand, any Slit ligand or Slit2. In view of the fact that the references cited in the rejection find results counter to those claimed, there is a lack of predictability in the art, angiogenesis and vascular guidance are complex, the working examples and guidance in the specification are limited, and the breadth of the claims, the examiner concludes that it would require undue experimentation for the skilled artisan to make and/or use the full scope of the
15 claimed invention.

Claims 7, 8, 19 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the
20 relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants argue that:

25 In order to more fully address the rejection ..., Applicants have submitted herein a Declaration under 37 C.F.R. § 1.132 by Dean Y. Li... Further, ...the references cited by the Examiner in support of the rejection ...are based on experimental

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work that is distinguishable from the work reflected in the specification of the present application and/or simply do not provide enough information to contravene the specific results achieved by the inventors in the present application. Moreover, the specification of the present application provides specific experimental examples that, when considered together with the detailed description of the Robo-4 receptor, exemplary ligands, and methods of use described in the present application, would allow one of ordinary skill in the art to practice the full scope of the invention recited in claims 7 through 9 and 19 through 22, as they are amended herein.

Applicants' arguments have been fully considered but they are not persuasive. The declaration under 37 CFR 1.132 filed 10/29/2008 is insufficient to overcome the rejection of claims 7, 8, 19 and 20 based upon a failure to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, as set forth in the last Office action because: the declaration does not address the written description of the generic means for "activating said Robo4 receptor" or the written description of the generic "ligand capable of activating said Robo4 receptor." Neither the specification nor the claims limit the means for "activating said Robo4 receptor" or the Robo-4 receptor ligand's structure. Therefore, the Robo4 receptor activation and Robo-4 receptor ligand are defined by function alone. That is not sufficient to satisfy the written description requirement. See *Eli Lilly*, 119 F.3d at 1568, 43 USPQ2d at 1406 ("definition by function ... does not suffice to define the genus because it is only an indication of what the gene does, rather than what it is"). Therefore, applicants were not in possession of the generic means for "activating said Robo4 receptor" or the generic "ligand capable of activating said Robo4 receptor."

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7–12 and 19–22 are rejected under 35 U.S.C. 112, second paragraph, as being

5 indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants argue that:

10 The specification of the present application provides specific examples of Robo-4 receptors and equips one of ordinary skill with sufficient information to understand what is meant by the term "Robo-4" and identify cells and/or tissues expressing Robo-4 receptor. Therefore, Applicants respectfully submit that one of ordinary skill in the art would appreciate the metes and bounds of claims 7 through 9 and 19 through 22, as such claims are considered in light of the teachings provided in the specification of the instant application.

15 Applicants' arguments have been fully considered but they are not persuasive. Although the claims are interpreted in light of the specification, limitations from the spec are not read into the claims. The specification does not identify that material element or combination of elements which is unique to, and, therefore, definitive of "Robo-4 receptor." An artisan cannot determine
20 what additional or material limitations are placed upon a claim by the presence of this element. The metes and bounds are not clearly set forth. It is suggested that the claims recite a "native Robo-4 receptor," as supported by paragraph 0032 of the specification.

New Formal Matters, Objections and/or Rejections

The text of those sections of Title 35, U.S. Code not included in this action can be found
25 in a prior Office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7–9 and 19–22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5 The preamble of claim 7 recites “preventing guided navigation.” However, the recited process step results in inhibiting guided navigation. It is unclear if the prevention or only the inhibition of guidance is to be achieved. Claims 8–9 and 22 depend from claim 7 and thus share this defect with claim 7. Therefore, claims 7–9 and 22 are indefinite because they lack a process step which clearly relates back to the claim preamble and it is unclear what process is to be
10 achieved; it is unclear what result of the process can be inferred. The metes and bounds are not clearly set forth.

 The preamble of claim 19 is directed to preventing angiogenesis. However, the result of the process step is inhibiting migration. It is unclear if the prevention of angiogenesis or the inhibition of migration is to be achieved. Claims 20–22 depend from claim 19 and thus share
15 this defect with claim 19. Therefore, claims 19–22 are indefinite because they lack a process step which clearly relates back to the claim preamble and it is unclear what process is to be achieved; it is unclear what result of the process can be inferred. The metes and bounds are not clearly set forth.

Conclusion

20 No claims are allowable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

ANY INQUIRY CONCERNING THIS COMMUNICATION OR EARLIER COMMUNICATIONS FROM THE EXAMINER SHOULD BE DIRECTED TO DAVID S. ROMEO WHOSE TELEPHONE NUMBER IS (571) 272-0890. THE EXAMINER CAN NORMALLY BE REACHED ON MONDAY THROUGH FRIDAY FROM 9:00 A.M. TO 5:30 P.M. IF ATTEMPTS TO REACH THE EXAMINER BY TELEPHONE ARE UNSUCCESSFUL, THE EXAMINER'S SUPERVISOR, MANJUNATH RAO, CAN BE REACHED AT (571)272-0939.

IF SUBMITTING OFFICIAL CORRESPONDENCE BY FAX, APPLICANTS ARE ENCOURAGED TO SUBMIT OFFICIAL CORRESPONDENCE TO THE CENTRAL FAX NUMBER FOR OFFICIAL CORRESPONDENCE, WHICH IS (571) 273-8300.

CUSTOMERS ARE ALSO ADVISED TO USE CERTIFICATE OF FACSIMILE PROCEDURES WHEN SUBMITTING A REPLY TO A NON-FINAL OR FINAL OFFICE ACTION BY FACSIMILE (SEE 37 CFR 1.6 AND 1.8).

ANY INQUIRY OF A GENERAL NATURE OR RELATING TO THE STATUS OF THIS APPLICATION OR PROCEEDING MAY BE OBTAINED FROM THE PATENT APPLICATION INFORMATION RETRIEVAL (PAIR) SYSTEM. STATUS INFORMATION FOR PUBLISHED APPLICATIONS MAY BE OBTAINED FROM EITHER PRIVATE PAIR OR PUBLIC PAIR. STATUS INFORMATION FOR UNPUBLISHED APPLICATIONS IS AVAILABLE THROUGH PRIVATE PAIR ONLY. FOR MORE INFORMATION ABOUT THE PAIR SYSTEM, SEE [HTTP://PAIR-DIRECT.USPTO.GOV](http://PAIR-DIRECT.USPTO.GOV). CONTACT THE ELECTRONIC BUSINESS CENTER (EBC) AT 866-217-9197 (TOLL-FREE) FOR QUESTIONS ON ACCESS TO THE PRIVATE PAIR SYSTEM,

/DAVID S ROMEO/
PRIMARY EXAMINER, ART UNIT 1647

DSR
FEBRUARY 17, 2009